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**Waterpipe product packaging and labelling compliance with Article 11 of the Framework Convention of Tobacco Control at the 3<sup>rd</sup> International Hookah Fair: a cross-sectional analysis**

## **ABSTRACT**

### **Introduction**

Poor regulation of the waterpipe tobacco industry is likely to be contributing to the increased use of waterpipe tobacco smoking and to false perceptions of reduced harm. This study sought to assess the compliance of waterpipe product packaging and labelling compliance with Article 11 of the Framework Convention of Tobacco Control (FCTC).

### **Methods**

We evaluated tobacco product samples collected at the 3<sup>rd</sup> International Hookah fair in May 2015 for their compliance with ten domains of Article 11 of the FCTC relevant to our study design: health warning location (5 domains), size (2), use of pictorials (1), use of colour (1), and packaging information on constituents and emissions (1). Also, we evaluated waterpipe accessory (e.g. charcoal) packaging for misleading claims.

### **Results**

We collected 15 tobacco products (8 unique brands) and 13 charcoal products (11 unique brands) from 33 waterpipe companies. Ten of these tobacco products had health warnings on their principal display areas, covering a median of 22.4% (interquartile range 19.4-27.4%) of those areas. Three tobacco products had pictorial, in-colour health warnings. We judged all tobacco products packaging information on constituents and emissions as misleading. Eight of 13 charcoal products displayed environmentally friendly descriptors and/or claims of reduced harm that we judged as misleading.

## **Conclusion**

No waterpipe tobacco products at this trade exhibition were compliant with ten domains of Article 11 of the FCTC. Increased compliance of waterpipe tobacco regulation is warranted. An improved policy framework for waterpipe tobacco should consider regulation of accessories such as charcoal products.

## **What this study adds**

This is one of the first studies to assess compliance with regulation of waterpipe tobacco packaging and labelling, which remains poor across samples at this trade exhibition. The need for heightened waterpipe tobacco industry compliance should consider the role of waterpipe smoking accessories, such as charcoal products, which should be included in a renewed policy for waterpipe tobacco regulation.

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# INTRODUCTION

Waterpipe tobacco use describes the process of using charcoal to heat tobacco, and inhaling the resultant smoke mixture after its passage through a water-containing instrument. It is increasingly prevalent in Western settings. The national prevalence of current use in European countries such as Latvia is worryingly high (11.5% among adults, 22.7% among schoolchildren)<sup>1, 2</sup>. While in the United States (US), 1.5% of adults<sup>3</sup> and 9.4% of schoolchildren are current users; the latter is an increase from 4.1% three years earlier in 2011<sup>4</sup>. Such estimates are alarming given health outcomes of waterpipe tobacco smoking include cancers of the lung and oral cavity, cardiovascular diseases, respiratory diseases, and low birth weight<sup>5</sup>. Waterpipe tobacco users are victims of a “double whammy” as they are exposed to the combustion products of tobacco, as well as those from charcoal. The latter’s toxicological profile includes but is not limited to carbon monoxide (implicated in cardiovascular disease) and carcinogenic chemicals such as benzene, of which there is no safe level of exposure<sup>6, 7</sup>.

Tobacco use prevalence is falling in response to tighter regulation<sup>8</sup> catalysed by the World Health Organization Framework Convention on Tobacco Control (WHO FCTC). The FCTC is a global agreement to protect against the consequences of tobacco use by recommending universal policy standards. To date it has been signed by 168 countries and is legally binding in 180 ratifying countries. While waterpipe tobacco is not exempt from the FCTC, high and rising prevalence is due in part to poor waterpipe tobacco industry regulation and inadequate communication of the potential health effects of waterpipe use. For example, a 2010 review of health warning labels from 74 waterpipe tobacco products manufactured in the Middle East found that only 3.5% of the total surface contained health warnings, and that misleading descriptors were commonplace<sup>9</sup>. Amongst university students in the United Kingdom

reporting ever use of waterpipe tobacco, only a quarter reported seeing health warnings on waterpipe tobacco packaging or apparatuses<sup>10</sup>. Qualitative research suggests the lack of health warnings on waterpipe tobacco packs creates the misperception that waterpipes may be safe<sup>11</sup>, and that fuller implementation of waterpipe product labelling may reduce attraction, increase knowledge of its harms, and alter purchasing behaviour<sup>12</sup>.

Except for the 2010 review<sup>9</sup>, there is almost a complete absence of information pertaining to waterpipe product packaging and labelling compliance. The aim of this study was to assess the compliance of waterpipe product packaging and labelling compliance with the relevant guidelines of the FCTC; Article 11.

## **METHODS**

### **Setting and design**

The 3<sup>rd</sup> International Hookah Fair, held in Frankfurt (Germany) in May 2015, was promoted as “*the only trade fair primarily specializing in waterpipes, electronic shisha, hookah tobacco, charcoal and its requisites*”<sup>13</sup>. It is reported that 11,421 individuals from 72 different countries attended the Fair<sup>14</sup>. As such it offers a unique window into the current status of the global waterpipe market and the range of products available. We undertook a cross-sectional study of product samples distributed at this two-day public Fair. The Imperial College Research Ethics Committee approved this study.

### **Definitions**

Under an existing product categorisation scheme<sup>15</sup>, we categorised products as either waterpipe consumption products (tobacco or tobacco substitutes) or waterpipe accessories (apparatuses, charcoals, or other). We use the term “tobacco substitutes” to refer to a non-tobacco product that is prepared and smoked in the same as way as conventional waterpipe

tobacco. These could include flavoured synthetic stones known as ‘steam stones’, chemically processed pieces of fruits known as ‘shisha fruits’, and flavoured pastes known as ‘hookah gels’<sup>15</sup>.

### **Data collection**

Three researchers (MJ, AD, TL) attended the exhibition and identified companies displaying waterpipe consumption products or waterpipe accessories. Researchers used a census sampling approach by sequentially visiting each exhibition stand and requesting product samples. They did not introduce themselves as researchers but as regular fair visitors.

### **Data collected**

For waterpipe consumption products we collected information on the brand, country of manufacture, shape, weight, and flavour. For tobacco products, but not for tobacco substitutes (to which the FCTC does not apply), we assessed packaging and labelling compliance with ten domains of Article 11 of the FCTC<sup>16</sup>, focusing on design elements and information on constituents and emissions (Box 1). These ten domains were selected in accordance with our cross-sectional study design, and any domain requiring assessment over time (such as the requirement to rotate through different health warnings every few months) could be assessed. We considered images of fruit, figures for emission yields and the presence of expiry dates as examples of quantitative or qualitative statements of reduced harm, in line with the examples provided by Article 11<sup>16</sup>.

For waterpipe accessories we collected information on the brand, country of manufacture, weight, charcoal specificity for waterpipe use, and presence of misleading descriptors. We defined misleading descriptors in a similar way to tobacco product misleading descriptors, as directed by Article 11 examples<sup>16</sup>.

### **Data analysis**

We conducted simple descriptive analyses. We analysed and reported categorical variables as frequencies and percentages. Given continuous variables were not normally distributed, we analysed and reported them as medians and interquartile ranges (IQR).

## **RESULTS**

After removal of duplicates we analysed 35 products: 22 waterpipe products of consumption (15 tobacco, 7 tobacco substitutes) and 13 accessories (all charcoal products) from 33 waterpipe companies. Other product samples (e.g. waterpipe apparatuses) were not distributed at the Fair.

### **Waterpipe consumption products**

Tobacco: 15 tobacco products constituted 8 brands (Al AraBiya, AlMahmood Molasses, Alrayan, Elegans Tobacco, Majaz, Nubia Tobacco, Twist, and Ultimate Tobacco Green). Ten (66.7%) were manufactured in the Middle East (UAE or Jordan), 3 (20%) in south Asia (India), and 2 (13.3%) in Europe (Germany). Ten tobacco products (66.7%) resembled standard cigarette packs in shape and weighed 50g, 4 (26.7%) were in tubs and ranged from 25g to 200g, and 1 (6.7%) was in a pouch and weighed 20g. The overall median weight was 50g (IQR 50-50g). The most common flavours were grape (3 products), strawberry (3) apple (2), and the remainder were green, melon, secret aroma, twist, and watermelon. One was ‘unwashed’ tobacco (i.e. no flavour) and another had no flavour shown.

We found 34 health warnings on 15 tobacco products, and each product contained at least 1 health warning (median 2, IQR 2-3). Table 1 summarises the compliance of tobacco products with selected domains of Article 11 of the FCTC. No tobacco product was compliant with all 10 domains. For example, over half of tobacco products (53.3%, n=8) did not have health warnings on their principal display areas; and the remainder that did had a median of 22.4% (IQR 19.4-27.4%) cover. No tobacco products exceeded greater than 30% health warning cover. Twelve tobacco products (80.0%) had no pictorial health warnings; while the 3 (20.0%)

that did were all in colour. All tobacco products contained misleading descriptors, which were either portraying a false impression of reduced harm (n=14, 93.3%; 11 products with fruit imagery, 3 products with terms such as “superior”, “first class” or “ultimate”), figures for emission yields (12 products, 60.0%), or expiry dates (11 products, 55.0%).

Tobacco substitutes: 7 tobacco substitutes constituted 4 brands (Beamer, Bigg, Shiazio, and Hookah Squeeze). 6 (85.7%) were manufactured in Europe (Germany or unspecified) and 1 (14.3%) in the USA. All tobacco substitutes were in tubs and were either 50g or 120g in weight (median 100g, interquartile range 50-120g). The most common flavour was blueberry (2 products), and the remainder were arctic ice, energy, grape, watermelon, and X party.

### **Waterpipe accessories**

Charcoal: 13 charcoal products constituted 11 brands (Aladin Bambooccha, Black Coco’s, Coco Mazaya, Coco Nara, Coco Palm, Cocofinest, CocoGreen, FortyFour, Instant Lite, Keyf 1001, and Tom Cococha). 10 (76.9%) were manufactured in Southeast Asia (Malaysia, Indonesia) and 3 (23.1%) in Europe (Belgium, Germany, Holland). Charcoal products weighed a median of 625g (interquartile range 219-1500g). 8 charcoal products (61.5%) displayed specific references to waterpipe tobacco use. 8 charcoal products (61.5%) displayed environmentally friendly descriptors and claims of reduced harm, a sample of which is shown in Table 2.

## **DISCUSSION**

### **Summary of findings**

At this leading waterpipe trade exhibition, no tobacco products had health warning labels compliant with location, size, use of pictorials, and colour requirements of Article 11 of the FCTC. Furthermore, labelling on all tobacco products, and unexpectedly for the majority of charcoal products, contained messages of reduced harm.

### **Strengths and limitations**



This study is novel in design and adds data to the currently limited evidence base relating to the poor regulation of the waterpipe tobacco industry. The products collected may have reflected willingness of exhibitors to distribute samples rather than being an exhaustive list of all products available at the Fair, and as such may not be representative of product labelling across the wider industry. Furthermore, this study could not collect, and therefore could not analyse the compliance status of, waterpipe accessories beyond charcoal products. Analyses of online waterpipe retailers could address these limitations and is a consideration for future research.

### **Comparison to similar studies**

A review of tobacco control laws from 61 countries worldwide suggested that for waterpipe tobacco products, 14 countries (Australia, Canada, Hong Kong, Jamaica, Japan, Jordan, Macau, Madagascar, Malaysia, Niger, Pakistan, Poland, Taiwan, and Thailand) may have exemptions for health warnings, and 6 countries (Australia, Brazil, Chile, China, Japan, and Jordan) may have exemptions for misleading descriptors<sup>17</sup>, despite the FCTC describing that such policies should be comprehensive for all tobacco products<sup>16</sup>. In countries with no exemptions for waterpipe tobacco smoking, such as England, enforcement of tobacco control laws on waterpipe tobacco retailers may be difficult given the overwhelmingly large number in operation<sup>18</sup>. Furthermore, some evidence suggests that existing fines for breaching tobacco control laws may be disproportionately small for dedicated waterpipe-serving premises who rely on waterpipe tobacco sales as their main source of income<sup>17</sup>.

### **Implications for public health policy**

Health policy makers have been slow to respond to the growth of the waterpipe tobacco industry, particularly outside of its traditional markets. Further surveillance of waterpipe tobacco packaging and labelling is warranted, in the context of wider efforts to monitor waterpipe industry compliance with tobacco control legislation. Given that waterpipe tobacco

can be sold to consumers as ‘ready-to-smoke’ apparatuses in addition to tobacco packages, tobacco control packaging and labelling requirements should also be applied to the apparatus itself. Turkey appears to be the only country to legislate to require health warnings on waterpipe apparatuses<sup>17</sup>. Further discussion is needed to assess whether the apparatus should also be subject to labelling requirements and the coherence of current labelling regimes for waterpipe and tobacco products. Discussion should focus on consideration of the style, shape, colour, and material used on waterpipe apparatuses, all of which may play a role in the branding attachment towards waterpipe tobacco smoking.

Policy discussions should also address charcoal products that make safety claims for waterpipe tobacco smokers. Given their sole purpose may be for waterpipe tobacco use, these could be considered as tobacco products and should be regulated in line with tobacco products. Three types of charcoal are commonly used in waterpipe tobacco smoking: charcoal briquettes, charcoal quick-lighting discs, and bamboo/coconut shell charcoal<sup>19</sup>. All three charcoal types contain a substantial toxicological profile, including carbon monoxide and known carcinogenic substances<sup>7</sup>. As such claims about increased safety should be considered misleading.

## **DECLARATION OF INTERESTS**

None

## **FUNDING**

None

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## TABLES

**Table 1: Percentage of waterpipe tobacco products non-compliant with ten domains of Article 11 of the FCTC**

<b>Domain</b>	<b>% non-compliant (n)</b>
<b>DESIGN ELEMENTS (health warning labels)</b>	
<b>(A) Location</b>	
1. On the principal display areas	53.3 (8)
2. At the superior aspect of the principal display areas	100.0 (15)
3. On all sides of the package	100.0 (15)
4. Undamaged/unconcealed during normal package opening	0.0 (0)
5. Unobstructed by other required packaging and labelling markings	20.0 (3)
<b>(B) Size</b>	
6. No less than 30% of principal display areas (excluding border)	100.0 (15)
7. 50% or more of principal display areas (excluding border)	100.0 (15)
<b>(C) Use of pictorials</b>	
8. Use of pictorials on principal display areas	80.0 (12)
<b>(D) Colour</b>	
9. Pictorials in full colour	80.0 (12)
<b>INFORMATION OF CONSTITUTENTS AND EMISSIONS (general packaging)</b>	
10. No quantitative or qualitative statement of reduced harm	100.0 (15)

**Table 2: Misleading descriptors on the packaging of selected charcoal products**

<b>Brand/name</b>	<b>Misleading descriptor example</b>
CocoFinest	<p><i>COCOFINEST is a natural product. The charcoals are produced by 100% coconut shells. COCOFINEST burn longer and hotter then conventional shisha briquettes and leaves about 80% less ash than the normal ones."</i></p> <p><i>Fur dieses Produkt stirbt kein Baum."</i>(translated: No trees were cut down for this product)</p>
Tom Cococha	<p><i>No trees are cut down for this product"</i></p> <p><i>COCOCHA is an all natural product. The shisha cubes are produced by using only 100% coconut shells."</i></p> <p><i>COCOCHA burns hotter and longer than conventional shisha briquettes and leaves about 80% less ash than traditional ones."</i></p> <p><i>COCOCHA is a product with environmental bonus: Not a single tree is down for its production!"</i></p>

**Box 1: Ten selected domains of packaging and labelling assessment based on Article 11 of the FCTC**

**DESIGN ELEMENTS (health warning labels)**

**(A) Location**

1. On the principal display areas
2. On the superior aspect of the principal display areas
3. On all sides of the package
4. Unconcealed or undamaged with normal opening
5. Unobstructed by other required markings

**(B) Size**

6. No less than 30% of principal display areas (excluding border)
7. 50% or more of principal display areas (excluding border)

**(C) Use of pictorials**

8. Use of pictorials on principal display areas

**(D) Colour**

9. Pictorials in full colour

**INFORMATION ON CONSITUENTS AND EMISSIONS (general packaging)**

10. No quantitative or qualitative statement of reduced harm